

## Fortran Testing and Refactoring Infrastructure, Phase I

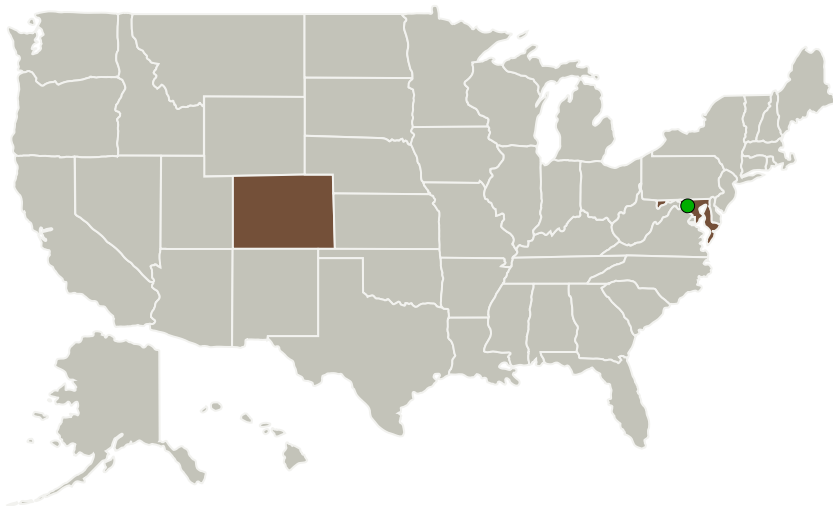
Completed Technology Project (2010 - 2010)



## Project Introduction

Tech-X proposes to develop a comprehensive Fortran testing and refactoring infrastructure that allows developers and scientists to leverage the benefits of a comprehensive Integrated Developer Environment (IDE). An intriguing aspect of the infrastructure is the integration of performance measurement and monitoring from within the IDE that allows developers to get immediate feedback about tests, the overall application and modifications due to refactoring. Our goal isto promote modern software engineering methodology to a broad spectrum ofFortran users. The infrastructure will facilitate refactoring newly developed and legacy codes correctly and accurately for single and multi-processor applications and will provide facility for both unit and regression testing. Major benefits to refactoring include creating robust codes that are more easily ported to different hardware and software platforms and promoting extensibility and collaboration. For example, refactoring code to remove common blocks allows porting to multi-core architectures with increased thread safety while promoting best software engineering practices. By leveraging the existing capabilities of pFUnit (an xUnit variant that supports Fortran) and Photran (a Fortran Integrated Development Environment and Eclipse plugin) we will be able to quickly contribute to the Fortrandeveloper community, whos feedback we hope to use to guide our product development.

## Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Tech-X Corporation	Lead Organization	Industry	Boulder, Colorado
● Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Colorado	Maryland

## Project Transitions

**January 2010:** Project Start**July 2010:** Closed out**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/140056>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Tech-X Corporation

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

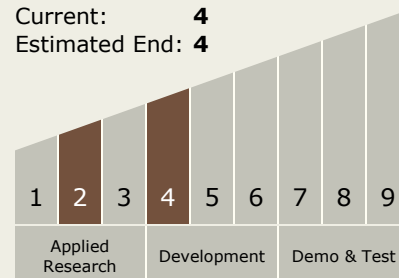
Carlos Torrez

**Principal Investigator:**

David M Alexander

## Technology Maturity (TRL)

Start: 2  
 Current: 4  
 Estimated End: 4



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### Technology Areas

#### Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - └ TX11.1 Software Development, Engineering, and Integrity
    - └ TX11.1.7 Frameworks, Languages, Tools, and Standards

### Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System